# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/899,994 | 07/09/2001 | Masaharu Matsumoto | 0074/010001 | 5174 |

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| EXAMINER |
|---|
| BATTAGLIA, MICHAEL V |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2652 | |

DATE MAILED: 01/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

| | Application No. | Applicant(s) |
| **Office Action Summary** | 09/899,994 | MATSUMOTO ET AL. |
| | Examiner | Art Unit | |
| | Michael V Battaglia | 2652 | |

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on _14 September 2004_.

2a)☒ This action is **FINAL**.      2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) _1-19_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-19_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _09 July 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

# DETAILED ACTION

This action is in response to Applicant's amendment, filed September 14, 2004. Claims 1-

19 are pending.

## *Claim Objections*

1.      Claim 12 is objected to because of the following informality. On line 15 of claim 12,

deleting "step of" from "said step of re-sampling" is suggested to avoid improper antecedent basis

issues. Appropriate correction is required.

## *Claim Rejections - 35 USC § 103*

2.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

Claims 1-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Otomo et al

(hereafter Otomo) (US 6,580,671) in view of Zhang (US 6,295,362).

In regard to claim 1, Otomo discloses a signal processing device which decodes a data

stream which includes a first audio data (Fig. 9B, elements C, SR, SL and SW) and a second audio

data (Fig. 9B, elements R and L) sampled at different respective sampling frequencies of fs1 and

fs2, where fs1<fs2 (Col. 10, lines 14-23), comprising: a decoder (Fig. 9B, element 21) for receiving

and separating said data stream into first and second audio data and for outputting said first audio

data and said second audio data (Col. 11, lines 32-37); a filter (Fig. 9B, element 25) for performing

re-sampling upon said first audio data at the same sampling frequency fs2 as that of said second

audio data and for outputting said first audio data from said filter (Col. 11, lines 45-48); and a delay

unit (Fig. 9B, element 24) for delaying said second audio data by a delay period equal to a

processing period due to said filter, and for outputting said second audio data concurrently with

said first audio data (Col. 11, lines 49-52). Otomo does not disclose that the filter also suppresses

aliasing distortion due to said re-sampling. It is noted that the re-sampling of Otomo is two-time

speed up re-sampling (Col. 11, lines 45-48).

Zhang discloses a filter (Fig. 4, elements 404 and 405) for performing two-time speed-up

re-sampling upon audio data, and for suppressing aliasing distortion due to said re-sampling, and

for outputting the audio data from said filter. Zhang discloses that a FIR filter is preferably used to

suppress aliasing distortion and teaches that by using the FIR filter, aliasing distortion due to re-

sampling is suppressed (Col. 4, lines 14-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate into the filter of Otomo the FIR filter of Zhang, the motivation

being to suppress aliasing distortion created during the re-sampling of the first audio data of

Otomo.

In regard to claim 2, Otomo discloses that said decoder separates said data stream,

processing unit thereof corresponding to said processing period in said filter, into said first and

second audio data having original sampling frequencies, respectively (Col. 10, lines 14-23 and Col.

11, lines 32-37).

In regard to claim 3, the signal processing delay time in said filter will inherently

correspond to a predetermined processing unit of inputted audio data in some manner. It is noted

that the manner in which the signal processing delay time corresponds to the predetermined

processing unit of inputted audio data is not specified.

In regard to claim 4, said filter comprises: a re-sampling circuit of Otomo (Fig. 9B, element

25) for performing re-sampling upon said first audio data having said sampling frequency fs1 at

said sampling frequency fs2 as that of said second audio data; and an FIR filter of Zhang (Fig. 4,

element 405) which suppresses aliasing distortion in said first audio data.

In regard to claims 5-7, Otomo discloses that said second audio data includes at least audio

data for a forward right channel and audio data for a forward left channel (Fig. 9B, elements R and

L and Col. 10, lines 44-46).

In regard to claims 8-10, Otomo discloses that said sampling frequency fs1 is one of **48**

**kHz** and 44.1 kHz, and said sampling frequency fs2 is twice as high as said sampling frequency fs1

(Col. 10, lines 14-23).

In regard to claim 11, Otomo discloses that said second audio data includes at least audio

data for a forward right channel and audio data for a forward left channel (Fig. 9B, elements R and

L and Col. 10, lines 44-46); said sampling frequency fs1 is one of **48 kHz** and 44.1 kHz; and said

sampling frequency fs2 is twice as high as said sampling frequency fs1 (Col. 10, lines 14-23).

In regard to claim 12, Otomo discloses a signal processing method which decodes a data

stream which includes a first audio data (Fig. 9B, elements C, SR, SL and SW) and a second audio

data (Fig. 9B, elements R and L) sampled at different respective sampling frequencies of fs1 and

fs2, where fs1<fs2 (Col. 10, lines 14-23), said method comprising the steps of: decoding the data

stream and separating the data stream into the first audio data and the second audio data and

outputting the first audio data and the second audio data (Fig. 9B, element 21 and Col. 11, lines

32-37); filtering the first audio data by re-sampling at the same sampling frequency fs2 as that of the

second audio data, and outputting the first audio data (Fig. 9B, element 25 and Col. 11, lines 45-48); and delaying the second audio data by a delay period equal to a processing period due to said step of filtering to output the second audio data concurrently with the first audio data (Fig. 9B, element 24 and Col. 11, lines 49-52). Otomo does not disclose that the filtering also suppresses aliasing distortion in the first audio data obtained following said step of re-sampling. It is noted that the step of re-sampling of Otomo is a step of two-time speed up re-sampling (Col. 11, lines 45-48).

Zhang discloses a step of filtering audio data by two-time speed-up re-sampling the audio data, and suppressing aliasing distortion in the audio data obtained following the re-sampling, and outputting the audio data (Fig. 4, elements 404 and 405). Zhang discloses that a FIR filter is preferably used to suppress aliasing distortion and teaches that by using the FIR filter, aliasing distortion due to re-sampling is suppressed (Col. 4, lines 14-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate into the step of filtering of Otomo the suppressing of aliasing distortion of Zhang, the motivation being to suppress aliasing distortion obtained following the re-sampling of the first audio data of Otomo.

In regard to claim 13, Otomo discloses that said step of decoding separates the data stream, into the first and second audio data having original sampling frequencies, respectively (Col. 10, lines 14-23 and Col. 11, lines 32-37).

In regard to claim 14, a processing period in said step of filtering inherently corresponds to a predetermined processing unit of inputted audio data in some manner. It is noted that the manner in which the processing period in said step of filtering corresponds to the predetermined processing unit of inputted audio data is not specified.

In regard to claim 15, said step of filtering comprises: the re-sampling the first audio data having the sampling frequency of fs1 at the same sampling frequency fs2 as that of the second audio data of Otomo (Col. 10, lines 14-23 and Col. 11, lines 45-48) and the suppressing aliasing distortion in the first audio data of Zhang (Col. 4, lines 14-20).

In regard to claim 16, Otomo discloses the step of providing the second audio data with at least audio data for a forward right channel and audio data for a forward left channel (Fig. 9B, elements R and L and Col. 10, lines 44-46).

In regard to claim 17, Otomo discloses that said step of filtering includes using the sampling frequency fs1 from at least one of **48 kHz** and 44.1 kHz, and said step of delaying includes using the sampling frequency fs2 which is twice the sampling frequency fs1 (Col. 10, lines 14-23).

In regard to claim 18, Otomo discloses the step of providing the second audio data with at least audio data for a forward right channel and audio data for a forward left channel (Fig. 9B, elements R and L and Col. 10, lines 44-46); and wherein step of filtering includes using the sampling frequency fs1 from at least one of **48 kHz** and 44.1 kHz; and said step of delaying includes using the sampling frequency fs2 which is twice as high as the sampling frequency fs1 (Col. 10, lines 14-23).

In regard to claim 19, Otomo discloses an optical disk reproducing device (Fig. 9B, elements 21-26) which reproduces multi-channel audio signals using a signal processing device according to claim 8, when reproducing an optical disk (Fig. 9B, element 18) upon which said first and second audio data, which have been sampled at respective different sampling frequencies fs1 and fs2 with fs1 <fs2, have been recorded as a single stream of audio data (Figs. 9A and 9B).

## *Response to Arguments*

3.       Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection. However, it is noted that Applicant's arguments against references used in rejections under 35 U.S.C. § 103 appear to be a combination of piecemeal analysis of the references and unsupported statements of lack of suggestion to combine references. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Further Applicant's arguments go through the references and simply state that each reference does not meet the limitations in the entire body of the independent claims without ever clearly discussing what parts of the claim limitations are not met by the combination of references used to make the rejections. Therefore, Applicant's arguments amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

## *Conclusion*

4.       Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,

will the statutory period for reply expire later than SIX MONTHS from the date of this final
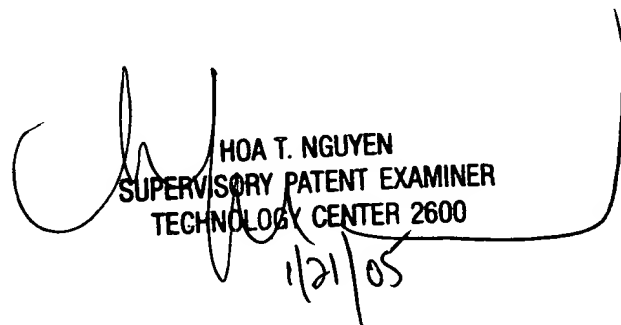
action.

Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Michael V Battaglia whose telephone number is (703) 305-4534. The

examiner can normally be reached on 5-4/9 Plan with 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

Hoa T Nguyen can be reached on (703) 305-9687. The fax phone number for the organization

where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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